

AMENDMENTS TO CLAIMS

Claims 1-27 (canceled)

Claim 28 (new): A method for forming a reinforced hydroform, comprising:

providing a first tubular structure having an outer surface;

disposing an adhesive structural material upon the outer surface with an applicator;

hydroforming the first tubular structure while the adhesive structural material is located upon the outer surface thereby forming a hydroformed contour of the first tubular structure with the adhesive structural material located upon the contour.

Claim 29 (new): A method as in claim 28, further comprising:

providing a second tubular structure having an inner surface defining a bore;

and

adhering the adhesive structural material to the inner surface of the second tubular structure.

Claim 30 (new): A method as in claim 29 wherein the step of hydroforming occurs while at least a portion the first tubular structure and the adhesive structural material are located within the open bore of the second tubular structure.

Claim 31 (new): A method as in claim 28 wherein the adhesive structural material is expandable at a temperature greater than its glass transition temperature.

Claim 32 (new): A method as in claim 31 wherein the applicator is an extruder.

Claim 33 (new): A method as in claim 32 wherein the expandable material is epoxy-based.

Claim 34 (new): A method as in claim 29 wherein the second tubular structure is metal.

Claim 35 (new): A method as in claim 34 wherein the second tubular structure is formed of aluminum or steel.

Claim 36 (new): A method as in claim 28 further comprising:
assembling the first tubular structure to a vehicle as a portion of a frame of the vehicle.

Claim 37 (new): A method as in claim 31 wherein the structural material expands from 0% to 300% relative to its original size.

Claim 38 (new): A method as in claim 28 wherein the adhesive structural material is activated for curing at a temperature in the range of about 148.89 °C to about 204.44 °C.

Claim 39 (new): A method as in claim 29 wherein the adhering step is performed prior to the step of hydroforming.

Claim 40 (new): A method for forming a reinforced hydroform, comprising:
providing a first structure having an inner surface defining an open bore;
providing a second structure having an outer surface;
positioning an adhesive structural material within the open bore of the first structure between the inner surface defining the bore and the outer surface of the second structure; and
hydroforming the first structure and second structure while at least a portion of the structural material is located in the open bore.

Claim 41 (new): A method as in claim 29 further comprising:
adhering the adhesive structural material to the inner surface defining the bore and to the outer surface of the second structure.

Claim 42 (new): A method as in claim 40 wherein the first structure is tubular.

Claim 43 (new): A method as in claim 40 wherein the second structure is tubular.

Claim 44 (new): A method as in claim 40 wherein the step of positioning the adhesive structural material within the open bore of the outer tubular structure includes disposing the adhesive structural material upon the outer surface of the inner tubular structure.

Claim 45 (new): A method as in claim 40 wherein the adhesive structural material is expandable at a temperature greater than its glass transition temperature of the expandable material.

Claim 46 (new): A method for forming a reinforced hydroform automotive vehicle frame structure, comprising:

- providing an outer elongated metal tubular structure having an inner surface defining an open bore;

- providing an inner elongated metal tubular structure having an outer surface;

- applying an adhesive structural material to at least one of the inner surface defining the open bore and the outer surface of the inner tubular structure;

- introducing the adhesive structural material within a space defined between the inner surface of the outer tubular structure and the outer surface of the inner tubular structure; and

- hydroforming the outer tubular structure and the inner tubular structure with the adhesive structural material therebetween to form the automotive vehicle frame structure and for forming a first hydroformed contour in the inner tube and a second hydroformed contour in the outer tube wherein the first hydroformed contour is adjacent to and corresponding with the second hydroform contour and at least a portion of the expandable material is located between the first hydroformed contour and the second hydroformed; and.

Claim 47 (new): A method as in claim 46 further comprising:

bonding the thermally activated polymeric material to at least one of the tubular structures wherein the bonding is performed prior to the step of hydroforming.